



NETWORK STORAGE ADAPTER USER MANUAL

MODEL 522496



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1. INTRODUCTION

Thank you for purchasing the INTELLINET NETWORK SOLUTIONS™ Network Storage Adapter, Model 522496. With data storage needs changing, disk drives becoming ever larger and digital content a growing part of today's lifestyle, this device allows you to quickly and easily share your USB-based storage and printing devices on any Ethernet network. The Network Storage Adapter provides you with four USB ports that can be used for storage or peripherals: Store more than a terabyte of data or let others plug in their portable media devices to listen to music, watch videos or share information among a large group.

Installation is fast, too – in most cases without the need to understand or remember IP addresses, workgroups or complex configuration parameters. Plus, if you set up the unit and then forget the settings, it doesn't matter – we've provided software that detects and reconfigures the unit without losing all the user and share configurations.

The following instructions will show you how to get the most out of this device – including sharing any digital media devices and printers you may have – and will answer frequently asked questions, as well.





2. UNDERSTANDING THE NETWORK STORAGE ADAPTER

All connections to this device are made on the rear panel. Outlets are listed below as viewed from right to left.



- Power: Connect the power adapter here.
- Ethernet: Connect your Network Storage Adapter to your switch, router or even another computer here using a Category 5 UTP patch cable. The connection is 10/100 fast Ethernet, and will auto-sense whether a standard or crossover patch cable is being used.
- USB1 First of four USB ports. Connect your USB 1.0/1.1/2.0 devices here.
- USB2 Second of four USB ports. Connect your USB 1.0/1.1/2.0 devices here.
- USB3 Third of four USB ports. Connect your USB 1.0/1.1/2.0 devices here.
- USB4 Fourth of four USB ports. Connect your USB 1.0/1.1/2.0 devices here.
- Reset Button This will restart the device, but will not reset all data to factory defaults. Press and hold for 10 seconds.



The front of the unit presents only status LEDs, which are positioned to mirror the corresponding connectors on the rear of the unit. LEDs are listed below as viewed from left to right.



Front View

Power	The power LED will be solid during power up, then will blink during normal operation.
Ethernet (LAN)	Will glow green when a link has been established with another device.
USB1	Will glow green if a USB connection has been made.
USB2	Will glow green if a USB connection has been made.
USB3	Will glow green if a USB connection has been made.
USB4	Will glow green if a USB connection has been made.

NOTE: There is no power switch on the INTELLINET NETWORK SOLUTIONS Network Storage Adapter. It's designed to be left on at all times.



UNDERSTANDING THE NETWORK STORAGE ADAPTER

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3. SETUP & CONNECTIONS

OVERVIEW

This section will show you how to connect the Network Storage Adapter to your network. Because the Network Storage Adapter uses the TCP/IP protocol to communicate with other devices on the network, be sure this is installed on the computer you will use to configure the Network Storage Adapter. Refer to Windows help for more information on TCP/IP installation.

HARDWARE INSTALLATION

1. Connect one end of the Ethernet cable to the Network Storage Adapter and the other end to your Ethernet switch or computer.
2. Connect USB devices to the Network Storage Adapter.
3. Connect the power adapter to the rear socket of the Network Storage Adapter, then into the wall outlet. If power is present, the Network Storage Adapter will proceed with its normal power-on sequence. The Network Storage Adapter self-test and boot-up sequences will be completed within five seconds. Once the Power LED is flashing on the front panel, the unit is ready.



- a. If USB devices are connected and recognized by the Network Storage Adapter, the corresponding LED will illuminate on the front panel.
- b. If there is a hardware problem, the orange Power LED will remain on instead of flashing.
- c. If the network connection has made a proper link, the Ethernet LED will blink green.

INSERTING AND CHANGING USB DRIVES AND PRINTERS

Supported USB devices (currently, USB hard drives and USB single-function printers) can be hot-swapped; that is, you do not need to power down the unit to replace devices. Devices running up to USB 2.0 High Speed mode can be used. The Network Storage Adapter currently supports only USB single-function printers. Multifunction devices that have built-in scanners may not function correctly.

The following USB drives are currently supported:

1. FAT32 drives formatted on Win98/WinXP computers can read/write data. Maximum partition size is 32GB and maximum file size is 2GB.
2. NTFS drives formatted on Win2000/WinXP computers are supported in Read-Only mode. There are no restrictions on partition or file size.

As mentioned above, the drives are hot-swappable; however, if you remove a drive during a Copy File operation, the file may not complete copying onto the attached drive.





SOFTWARE CONFIGURATION

The Quick Start Guide contains all the information you need to perform the initial setup of the Network Storage Adapter. The following section outlines in detail all the menu items and the functions they perform.

HOME

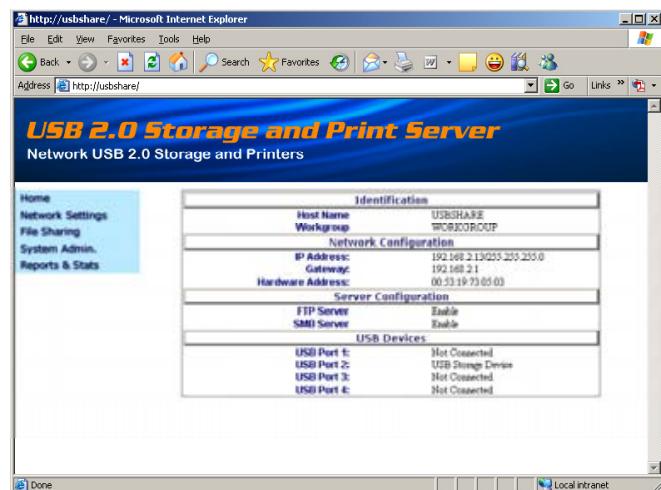
Launch Internet Explorer to configure the Network Storage Adapter. Currently, the configuration of the Network Storage Adapter can only be performed with Internet Explorer 5 and later.

When you first open the configuration menu through your web browser, you will be taken to the Home screen, which contains current status information about your Network Storage Adapter.

The Home screen is in four sections:

Identification contains the assigned hostname and the SMB/Windows workgroup information. Network Configuration shows the TCP/IP information of your Network Storage Adapter, and the IP address and subnet mask, gateway and MAC address of this unit.

Server Configuration displays server functions and whether they are enabled or disabled.



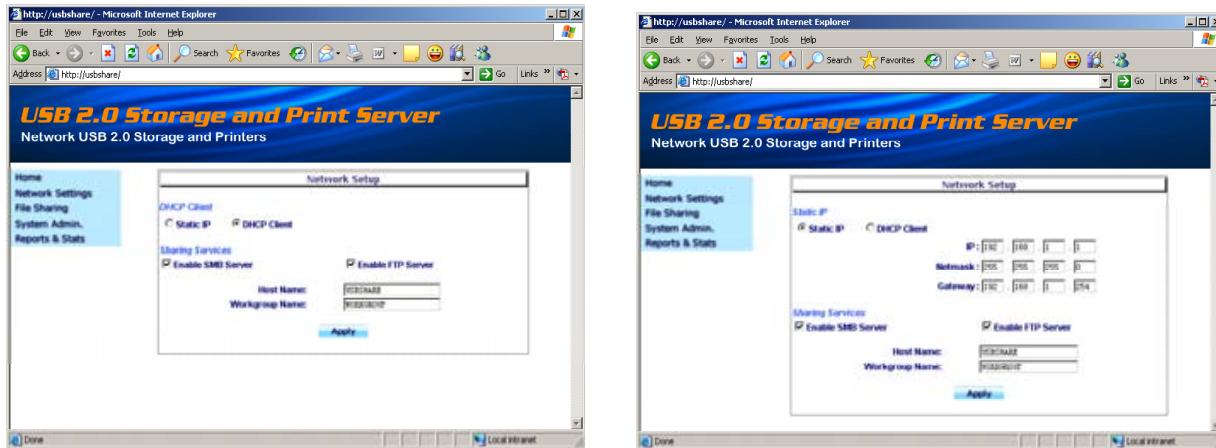


USB Devices displays the status of each USB device. If no device is present, "Not Connected" is displayed. If a device is present, then the type of device is displayed.

This is only a status screen: No changes are made from here. Clicking on "Home" on the menu on the left will bring you back here from any screen.

NETWORK SETTINGS

The Network Settings screen allows you to change network-specific information on the Network Storage Adapter. If you have a DHCP server on your network, select "DHCP Client"; otherwise, select "Static IP" and enter the IP information here.



SETUP & CONNECTIONS

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Also from Network Settings, you can enable and disable the SMB and FTP servers. If you disable the SMB server, the product will no longer be visible in Windows Networking. You can disable both SMB and FTP servers, meaning the product will function solely as a print server.

You can change the hostname and/or the workgroup name, as well. Click "Apply" to save the settings, or choose another menu item to discard.

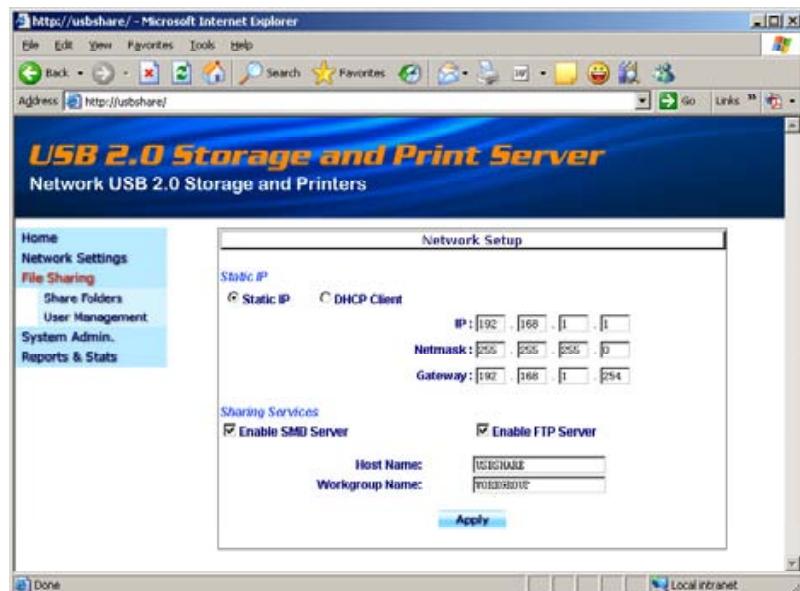
FILE SHARING

Click on the File Sharing menu item. This will drop down two more menu items:

Share Folders and User Management.

Share Folders lets you manage security access to each of the USB ports. You will be given a list of the four USB ports on the Network Storage Adapter. Click on a USB port to see the security levels assigned to users for that port.

In the Sharing Folders window, you will see that you are controlling USB Port 2.





You can assign any name to that USB port: It does not have to correspond to the port identifier. This is also the name that will be advertised by the Network Storage Adapter to Windows-based computers in the Network Neighborhood.

Share security is managed by each USB port. Each user is given one of the following security levels for each port in the system: Deny, Read Only or Read Write.

Clicking on "Allow Guest" will allow Windows clients to attach using the guest account. To give all users the same access level for that port, click on the access level heading.

Click "Apply" to save changes, or "Cancel" to discard any modifications. This will take you back to the USB port selection screen.

User Name	Deny	Read Only	Read Write
test	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>



SETUP & CONNECTIONS

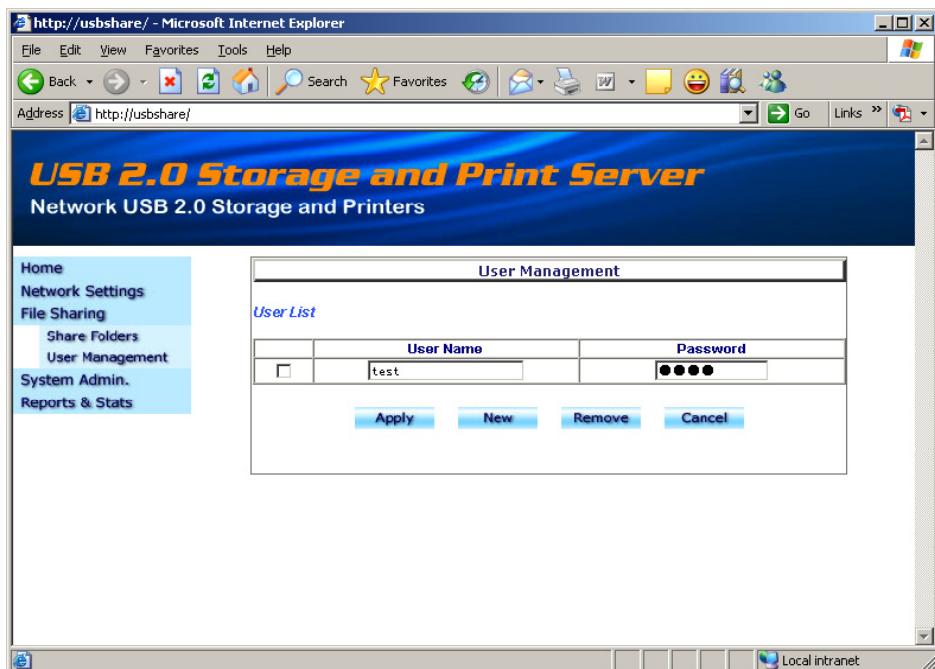
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User Management lets you add users to the system. Usernames must be 20 characters or less, and must be alphanumeric with no spaces. Special characters such as # and ? will not be accepted. The password field must be less than 14 characters in length, but has no limitations on character choice. This username applies to both SMB and FTP access modes.

To add a new user, click on "New." This will create a new field to enter a username and password. When finished, click "Apply" to accept the new settings. To add more users, repeat this step. To delete multiple users, click the check box next to each username, then click "Remove."

Clicking "Cancel" will discard all modifications and revert to the previously accepted configuration settings.



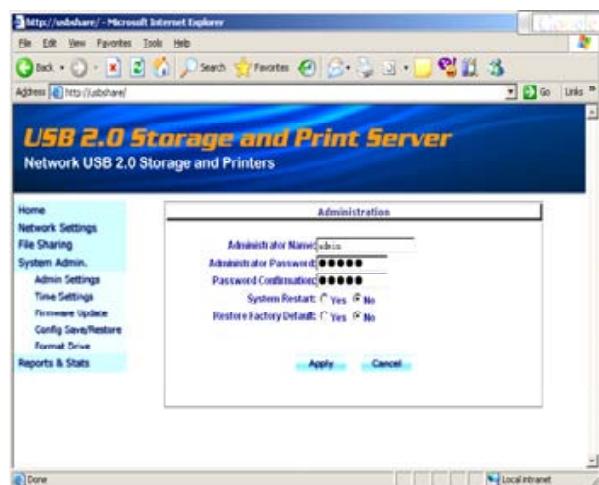


SYSTEM ADMIN

System Admin lets you perform various administration tasks.

Admin Settings allows you to change both the administrator name and administrator password. The same username and password restrictions apply here as for creating users. The administration account retains full control over the Network Storage Adapter and can access all shares at any time. It is not recommended to use this account to access the unit in everyday operation – use it only to edit configuration information through your browser. A soft restart can be initiated from this screen. This will simply restart the system with all previous configuration parameters intact.

Selecting the last option, "Restore Factory Default," will reset all the USB port share names back to default settings: USB1, USB2, USB3 and USB4. It will also set the administrator password back to "admin" and delete all other usernames apart from the admin user. This will not delete any information on attached storage media – but remember that if usernames are deleted users will not be able to access any information on drives until their usernames and passwords have been re-created.



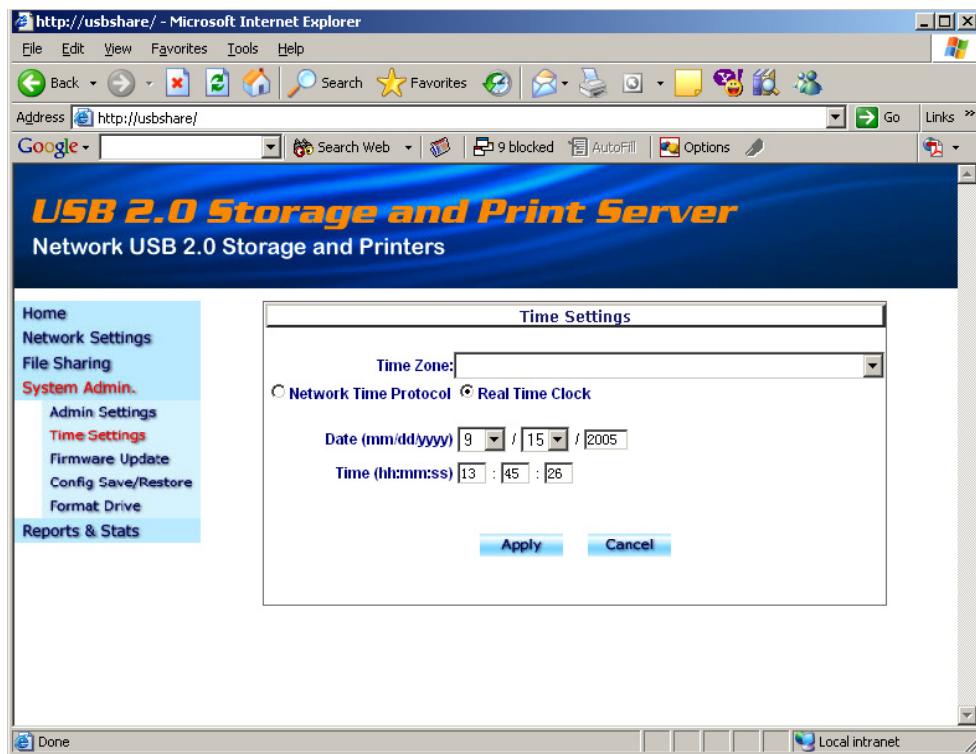


Time Settings makes it possible to sync the time with an NTP server if your INTELLINET NETWORK SOLUTIONS Network Storage Adapter can communicate with the Internet.

From the Time Settings window, select "Network Time Protocol (NTP)," then choose your time zone. The Network Storage Adapter will go out to the NTP pool and sync the time through the Internet. If the Network Storage Adapter is not connected to the Internet, simply set the date and time here manually.

Clicking "Apply" will save either of the settings.

Clicking "Cancel" will discard all modifications.



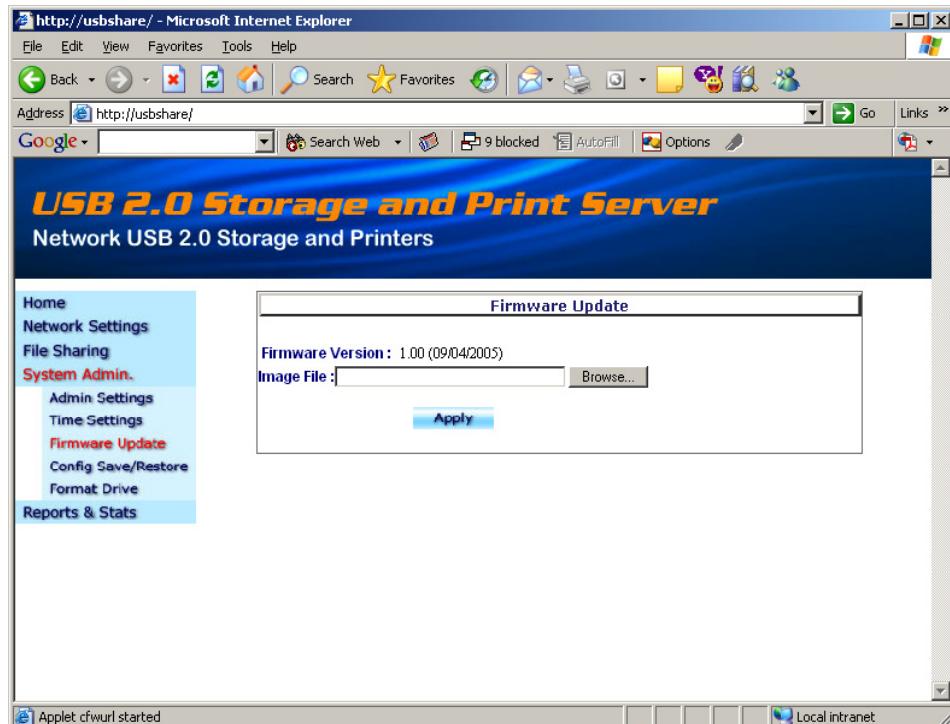


Firmware Update allows you to click on "Browse" and select the firmware file you wish to upload to your Network Storage Adapter.

Clicking "Apply" will start the firmware upgrade, during which you will see a status bar as the firmware is applied. When the upgrade is complete, the unit will restart automatically.

Click "Refresh" or hit F5 to see the new firmware version in use.

IMPORTANT: Do not power off the device during a firmware update or the product will become unusable.

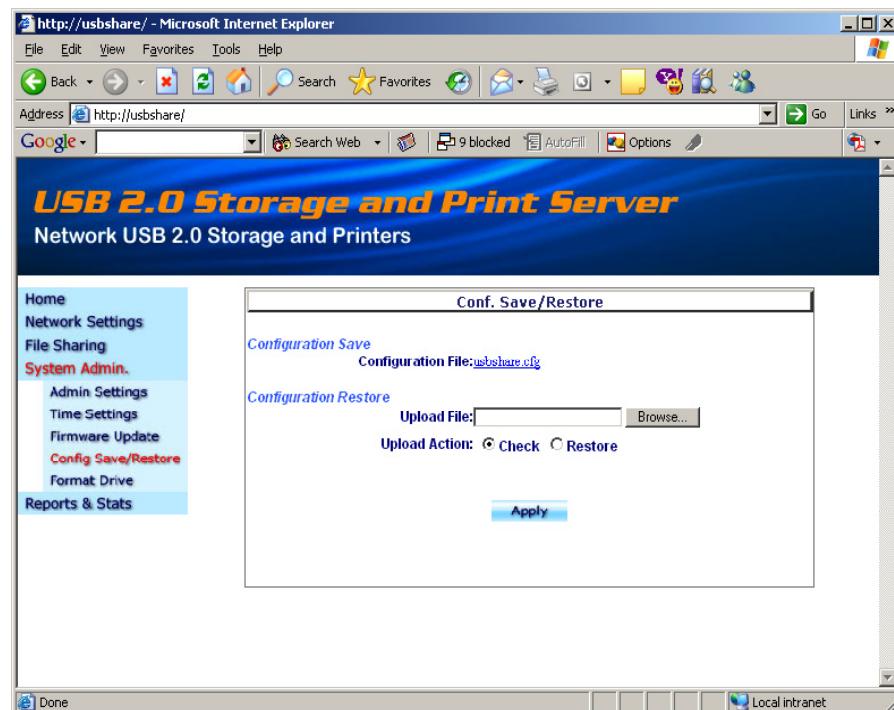




Config Save/Restore allows you to save the configuration file to your hard disk or restore a previously saved configuration file back to the Network Storage Adapter.

To save, click on the underlined file name. When prompted to save, choose the file name and location to direct the config file. To restore, click on "Browse" and locate the file you wish to load back into the Network Storage Adapter.

If you select "Check," the unit will only check and confirm the config file is in the correct format to be uploaded. Changing the selection to "Restore" will first check file integrity, then proceed to upload if the config file format is valid.





Format Drive lets you prepare a new hard drive that has yet to be formatted.

Since Windows 98 was introduced, FAT32 is the drive format that has been used to hold files on Windows-based computers for hard drives over 2 Gb in size. If you want to use your USB hard drives connected to both your Network Storage Adapter and your USB 2.0 ports on your Windows computer, you will need to use FAT32 formatting on those drives.

A typical scenario: You copy large amounts of data onto your drive while it is connected to a USB 2.0 port on your computer. Then you unplug the USB connector and attach it to a port on your Network Storage Adapter. In this scenario on your Windows computer, you must be sure that this drive is formatted using FAT32. If you are using Windows Me or Win98, this will almost certainly be the case; but if you are using Windows 2000 or Windows XP, you will need to choose: Windows XP cannot format FAT32 partitions larger than 32 Gb.

One of the other limitations of FAT32 is that the maximum file size it can hold is 4 Gb. For most people, a 4 Gb file is enough to hold even large AVI movies, but if you are performing backup operations to the Network Storage Adapter and your backup program cannot split files into smaller sections so they can fit on a FAT32 drive, then you cannot use FAT32 partitions for large backups.

To help you work around some of these problems, we have provided a format utility that can format attached USB drives.





WARNING: Formatting will erase the entire drive of data.

During the formatting, you can choose the drive you wish to format and the partition type. Apart from FAT32, you can choose Linux partitions, which do not have a 4 Gb file size limit. Your files can be more than 100 Gb if necessary. The only limitation is that the largest partition the INTELLINET NETWORK SOLUTIONS Network Storage Adapter can format is 128 Gb.

The following table illustrates what will happen with common drive sizes:

Drive Size (Gb)	Partition 1	Partition 2	Partition 3	Partition 4
80	80			
120	120			
160	128	32		
200	128	72		
250	128	122		
300	128	128	44	
400	128	128	128	16



REPORTS & STATS

Clicking on Reports & Stats will reveal the Reports menu item.

Clicking on Reports will show the log since the current startup of the device. It reports device insertion and removal as well as username authentication attempts and successes.

Items that need your attention are highlighted in red (shown as shaded here). All others are informational.

Event Logs		
Level	Time	Description
Normal	00:00:05 01/01	System startup
Warning	00:00:16 01/01	There is no DHCP lease obtained
Normal	00:00:25 01/01	Lease of 192.168.2.13 obtained, lease time 21600 seconds.
Normal	05:11:21 08/01	USB: usb storage device with vendor Cypress Semiconductor and product USB2.0 Storage Device was plugged on port 1.
Normal	08:08:13 08/01	Lease of 192.168.2.13 obtained, lease time 21600 seconds.
Normal	11:31:29 08/01	File Sharing: admin login from 192.168.2.2 with ftp service.



USING FTP

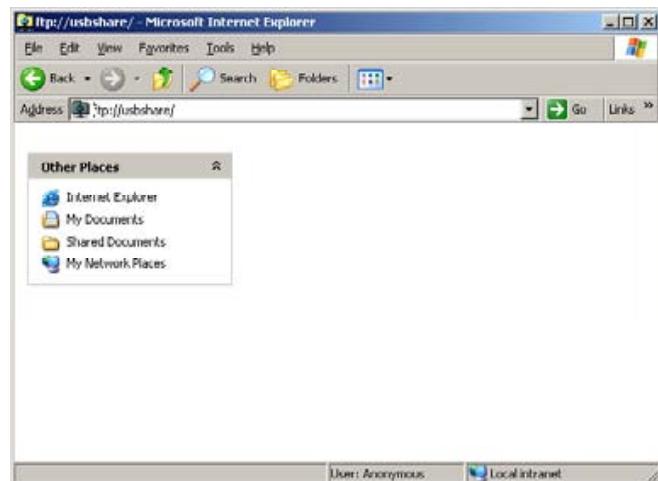
You can connect to the INTELLINET NETWORK SOLUTIONS Network Storage Adapter using any number of FTP tools available, either command line or windows based. Using the command line tools, you will be prompted along the way to provide username and passwords. These should match the usernames and passwords you have created for your Network Storage Adapter.

If you're planning to use a browser such as Internet Explorer, the most basic method to attach using FTP is to use the following URL:

ftp://usbshare/ or ftp://ip_address/

where "ip address" is the address you have assigned to your Network Storage Adapter.

You'll be taken to a blank Internet Explorer screen. This means that you have "attached" to the Network Storage Adapter and it is now waiting for your username/password. The reason for this is that Internet Explorer will attempt – by default – to attach to all FTP servers using the "Anonymous" username. Because the Network Storage Adapter has defined usernames, it will wait for you to supply the correct credentials.





To supply the correct username, click on "File → Login As...."

Enter the username and password you wish to use and click "Log On." Select the "Save password" option box if you want Windows to remember your information every time you want to log in. This doesn't mean you will log in automatically each time – you will still need to choose "File → Login As...." Windows will just prefill this information for you each time you select "Login As...."

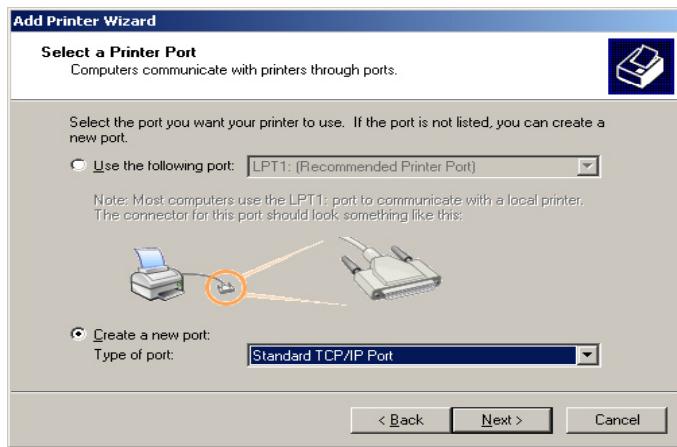
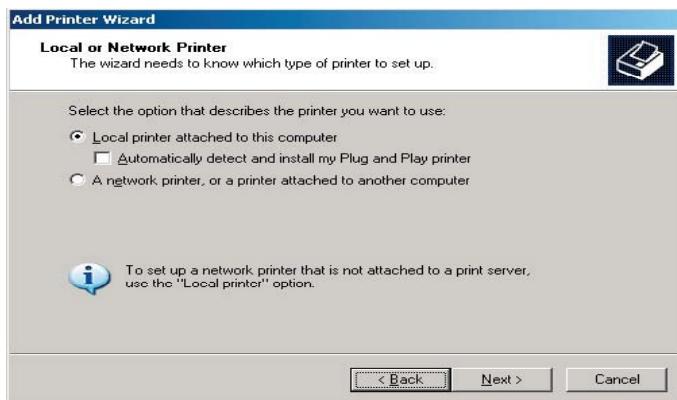




PRINTING

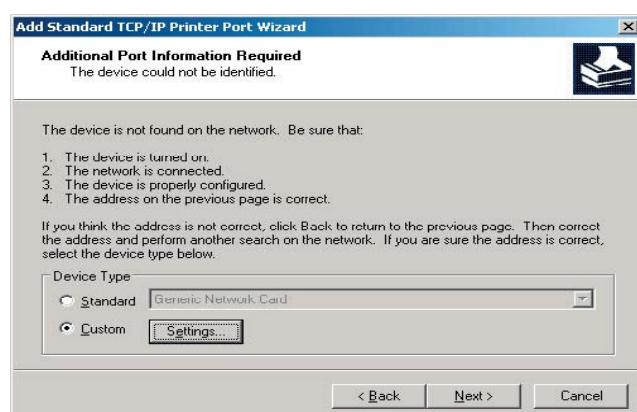
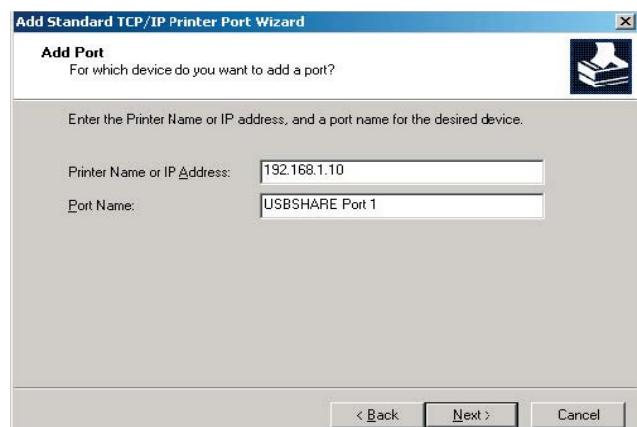
You can print to any USB1.1/2.0 single-function printer on any of the four ports. Simply connect the printer and verify that the connection is indicated by a green light beside the relevant port number on the front panel of the Network Storage Adapter. Following is an example of how to add a printer for Windows XP. The procedure for other versions of Windows is similar.

1. Start → Printers & Faxes.
2. Select "Add a printer from the menu."
3. Click "Next."
4. Local or Network Printer → select only "Local printer attached to this computer" → click "Next."
5. Select "Create a new port" and choose "Standard TCP/IP Port" → click "Next."





6. Click "Next."
7. Enter the IP address or name of your Network Storage Adapter and give the printer port a name on your computer. It's a good idea to use the port name on the Network Storage Adapter you have used for this printer. Click "Next."
8. Additional Port Information Required → select "Custom" and click on "Settings."





9. Fill in the appropriate port number for the port you have attached your USB printer:

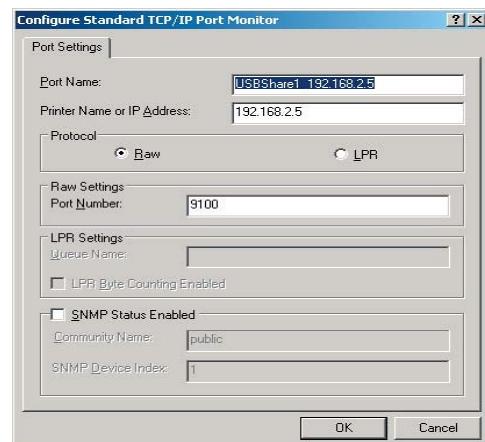
Port 1 – 9100

Port 2 – 9101

Port 3 – 9102

Port 4 – 9103

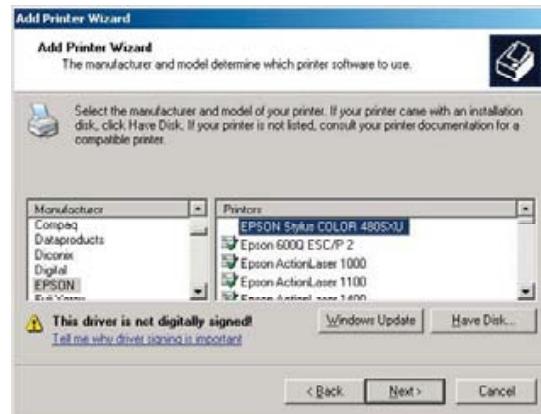
Click "OK," then "Finish."



10. You will now be prompted to select the correct printer driver to use. Please choose the driver for your printer from this list, or click "Have Disk" if you are going to install a new driver for your printer.

If you have only moved the printer from your computer to the Network Storage Adapter, the driver should already be installed and should be found by Windows during its hardware scan.

If the driver exists, continue to use the existing one!

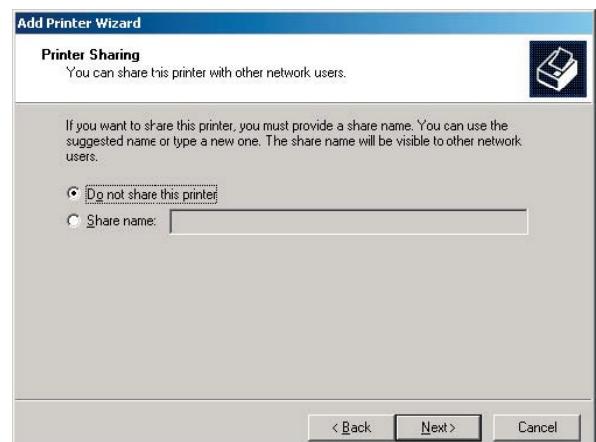




11. If you want, you can change the printer name and make it the default printer for the system. Click "Next" to accept this printer name.

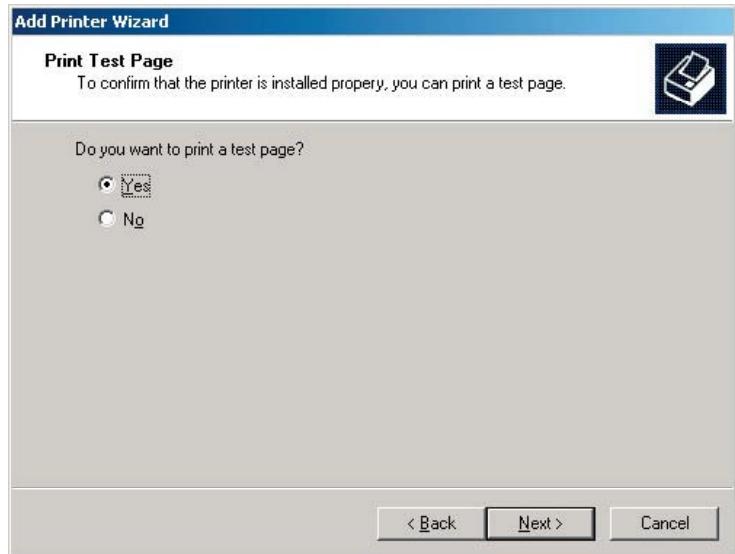


12. If you have File and Printer Sharing enabled in Windows, you may be prompted with the window to the right. Select "Do not share this printer."





13. Print a test page to ensure that the printer is working.
14. Click "Next," then "Finish." Your printer is now set up!



DEVICE FINDER

If your INTELLINET NETWORK SOLUTIONS Network Storage Adapter cannot be found on the network, launch the Device Finder* application located on the CD. This will locate all Network Storage Adapter devices on your network and list them by IP and MAC address.

* The Device Finder requires the .Net framework to run. Go to Windows Update and install if you don't already have it.

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SETUP & CONNECTIONS



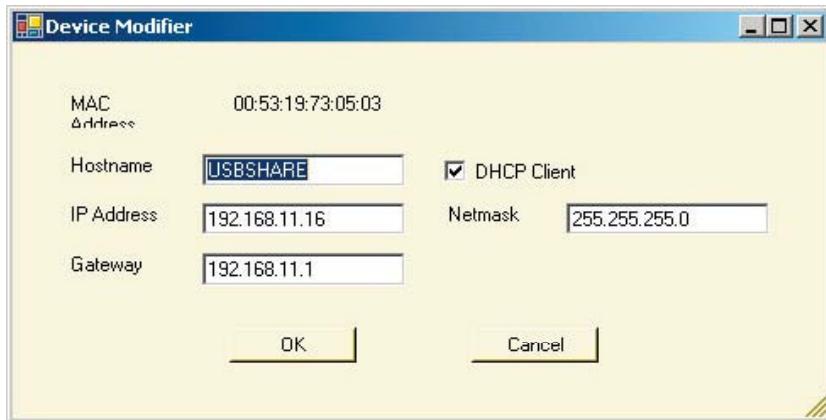
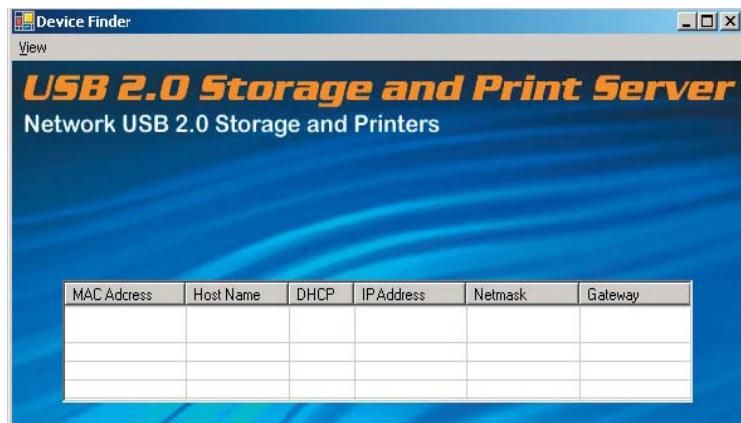


Double click on the MAC address for the device you want to configure. This will open another window and allow you to set the device name and DHCP/IP address.

In a DHCP server configuration (a small network with a cable/DSL router), define the hostname and select the DHCP check box. In a static IP server configuration, complete all details for static IP address. Click "OK," and details will be saved.

Click "Refresh" under the View menu. This will report the current IP address of your Network Storage Adapter.

Open Internet Explorer and type in the IP address for your Network Storage Adapter in the URL line, then click "Enter." You should now be able to access the login screen as shown.





4. TROUBLESHOOTING/FAQ

Question

No LEDs are lit.

Answer

Check that the power adapter is connected and turned on at the outlet.

Network LED not lit.

Check the connection from the Network Storage Adapter to your switch or gateway. If the light on the device at the other end is not lit, try replacing your patch cable with another Category 5 patch cord.

The USB LED does not light up after device is connected.

Check that your USB device is working by connecting it to your PC. If it works there, connect it back to the Network Storage Adapter and try again.

If your device has more than one storage device, it could have a built-in USB hub. The Network Storage Adapter cannot connect to USB devices that have multiple devices such as a multiport card reader or a drive enclosure that also contains a card reader.

You can also check the log to see whether USB devices have been detected and attached correctly. This is from the Reports section of the configuration screen in Internet Explorer.

I have no DHCP server.

By default, the Network Storage Adapter will search for a DHCP server and request an IP address. If you do not have a DHCP server, the unit will default to 192.168.1.1 and you will need to run the Device Finder application to set a different static IP address.

I have no DHCP server, and I am already using 192.168.1.1 in my network.

A1: Turn off the device that is using this address while you start the Network Storage Adapter and the Device Finder application. Configure the IP address you want to use for the Network Storage Adapter and restart the other device.

A2: With a patch cable, connect the Network Storage Adapter directly to the PC you want to configure from. Run the NUFinder application to set the IP address, then reconnect both devices back to your network.



Question

I want to copy files larger than 2 Gb to the Network Storage Adapter.

Can I use a browser other than Internet Explorer to configure my Network Storage Adapter?

When I had my printer connected to my computer, I could see information on how full the ink cartridges were. Can I see this when it's connected to the Network Storage Adapter?

I'm using Windows Millennium Edition (or Windows98SE), and I am being prompted for a password when I try to access a drive attached to my Network Storage Adapter.

Security rights seem to change after I make some changes in the Admin screen.

Answer

There is a 2 Gb file size limit to copying files to FAT32 partitions on the Network Storage Adapter. If you are using a backup program, try to configure it to break your backup files into small chunks of less than 2 Gb in size.

Internet Explorer is the only browser supported.

This feature is called "bi-directional printer information." Communication to printers attached to the Network Storage Adapter is one-way, so you will not be able to see this.

When you start Windows98SE or Millennium Edition, you are prompted for a username and password. To be able to access the shares on the Network Storage Adapter, this username and password must match a user you create on the Network Storage Adapter.

It is possible that, after you enter the configuration screen to the Network Storage Adapter through a browser on a computer, the computer will have Admin rights to ALL the shares. This is due to the fact that you have presented yourself as Admin by logging to make changes to settings. If you feel this is a potential risk, you have two options:

1. Restart the computer after finishing your edits.
2. Only use a computer you trust (i.e., your own) to make changes or log out and back in again by opening a Windows Explorer screen and choosing Tools → Disconnect Network Drive. Disconnect all drives and re-connect them as the appropriate user.



TROUBLESHOOTING/FAQ

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5. GLOSSARY

DHCP, or Dynamic Host Configuration Protocol, allows a computer to join an IP-based network without having a preconfigured IP address. DHCP is a protocol that assigns unique IP addresses to devices, then releases and renews these addresses as devices leave and rejoin the network.

TCP/IP, or Transmission Control Protocol (TCP) and Internet Protocol (IP), are two distinct network protocols, technically speaking. TCP and IP are so commonly used together, however, that TCP/IP has become standard terminology to refer to either or both of the protocols. An IP address is the address assigned to a computer to allow it to communicate with other computers running TCP/IP.

SMB, or Server Message Block, is a network file-sharing protocol. Communication over SMBs occurs mainly through a series of client requests and server responses. SMB client and server software exists within nearly all versions of Microsoft Windows.

A **LAN**, or Local Area Network, supplies networking capability to a group of computers in close proximity to each other, such as in an office building, a school or a home. A LAN is useful for sharing resources like files, printers, games or other applications.

Ethernet is a physical and data link layer technology for local area networks (LANs).





6. SPECIFICATIONS

Power Adapter: DC 5 V / 2 A

Power Consumption: 10 Watts (max.)

Operating Temperature: 0°C – 55°C

Storage Temperature: -20°C – 90°C

Humidity: 10% – 90% RH (noncondensing)

Dimensions: (L x W x H) 130 mm x 77 mm x 24 mm

Weight: 0.35 kg

Safety & EMI Certificates: CE & FCC-B





www.intellinet-network.com

Are you completely satisfied with this product?
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